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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KENNEDY, JENNIFER M

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 04/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,112

Applicant(s)

BASCERI ET AL.

Examiner

Jennifer M. Kennedy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) 80-99 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-79 and 100-106 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-79 and 100-106, drawn to a method of forming a capacitor, classified in class 438, subclass 240+.
- II. Claims 80-99, drawn to a capacitor, classified in class 361, subclass 312.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the upper electrode could be sintered rather than annealed.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Timothy Hagan on December 12, 2001 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-79 and 100-106. Affirmation of this election must be made by applicant in

replying to this Office action. Claims 80-99 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

This application contains claims directed to the following patentably distinct species of the claimed invention: An embodiment in which the high dielectric constant oxide dielectric material is amorphous when deposited. An embodiment in which the high dielectric constant oxide dielectric material is crystalline when deposited. An embodiment in which the upper layer electrode is oxidized using a gas plasma. An embodiment in which the upper layer electrode is oxidized by annealing under oxidizing conditions. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is oxidized in a furnace. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is oxidized by rapid thermal oxidation. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is oxidized in an inert atmosphere. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is oxidized by gas plasma. An embodiment in which the second layer of the high dielectric constant

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oxide dielectric material is oxidized at a temperature less than 700 degrees Celsius. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is oxidized at a temperature above 700 degrees Celsius. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is tantalum pentoxide. An embodiment in which the second layer of the high dielectric constant oxide dielectric material is $\text{Ba}_x\text{Sr}_{(1-x)}\text{TiO}_3$. Currently claims 1, 8, 11, 12, 73-76 and 100 are generic

The applicant must choose one of each of the aspects of the following:

1. The high dielectric constant oxide dielectric material is amorphous when deposited or the high dielectric constant oxide dielectric material is crystalline when deposited.
2. The upper layer electrode is oxidized using gas plasma or which the upper layer electrode is oxidized by annealing under oxidizing conditions.
3. The second layer of the high dielectric constant oxide dielectric material is oxidized in a furnace or the second layer of the high dielectric constant oxide dielectric material is oxidized in an inert atmosphere or the second layer of the high dielectric constant oxide dielectric material is oxidized by rapid thermal oxidation or the second layer of the high dielectric constant oxide dielectric material is oxidized by gas plasma
4. The second layer of the high dielectric constant oxide dielectric material is oxidized at a temperature less than 700 degrees Celsius or the second layer of high dielectric constant oxide dielectric material is oxidized at a temperature above 700 degrees Celsius.

5. The second layer of the high dielectric constant oxide dielectric material is tantalum pentoxide or the second layer of the high dielectric constant oxide dielectric material is $\text{Ba}_x\text{Sr}_{(1-x)}\text{TiO}_3$.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Kennedy whose telephone number is (703) 308-6171. The examiner can normally be reached on Mon.-Fri. 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

jmk

jmk
April 5, 2002


RICHARD BOOTH
PRIMARY EXAMINER